

REMARKS

Formal Matters

Claims 1-3 and 20 are pending.

Claims 1-3 and 20 were examined and rejected.

Claims 1 –3 are amended. The amendments were made solely in the interest of expediting prosecution, and are not to be construed as an acquiescence to any objection or rejection of any claim. Support for the amendments to claims 1 and 2 is found at the following exemplary location: page 24, lines 7-9. Accordingly, no new matter is added.

Applicants respectfully request reconsideration of the application in view of the remarks made herein.

Claim amendments

Claims 1 and 2 are amended to recite a retroviral vector “*adapted for* transfecting a mammalian cell”.

Pursuant to MPEP § 2173.05(g) and in view of *In re Venezia* 189 USPQ 149 (CCPA 1976), the Applicants submit that a functional limitation reciting “adapted for” should be afforded patentable weight.

Rejections under 35 U.S.C. § 103- general discussion

The claims stand rejected over Bryan (disclosing a *Renilla* GFP sequence) in view of Aran and/or Zolutukhin (both disclosing a retroviral vector encoding human codon optimized, mutated *Aequoria* GFP).

As argued in great detail in response to the prior Office Action, the art at the time of filing teaches that a **wild-type *Aequoria* GFP could not be expressed in a mammalian cell using a retroviral vector**. This position is factually supported by the papers of Hanazano, Levy, Cheng and Aran, and others¹. As previously argued, in view of the difficulties faced when expressing *wild type Aequoria* GFP using a retroviral vector, one of skill in the art would not attempt to use a retroviral vector encoding a *wild-type Renilla*

¹ See the Responses to prior Office Actions. The Applicants prior arguments apply with equal force. However, for the sake of

GFP with a reasonable expectation of success. In other words, when faced with expressing a fluorescent wild-type *Renilla* GFP and in view of the knowledge of other researchers' *failure* in using a retroviral vector encoding the fluorescent **wild type** *Aequoria victoria* GFP, one of skill in the art would expect that a retroviral vector encoding a **wild type** *Renilla mulleri* GFP would be a dismal failure. Since a reasonable expectation of success is a pre-requisite for establishing a *prima facie* case of obviousness, the Applicants submit that this rejection should be withdrawn.

In this Office Action, the Office points out that Bryan and Zolutukhin each indicate that *Renilla* GFP is superior to *Aequoria* GFP for analytical and diagnostic purposes because *Renilla* GFP possesses only one excitation peak. That said, the Office argues that one of skill in the art, in view of Bryan's and Zolutukhin's comments on the superiority of *Renilla* GFP, would practice the subject matter of the rejected claims with more than a reasonable expectation of success.

However, it is well established that both motivation to produce a claimed invention and a reasonable expectation of success of practicing a claimed invention must exist in order to establish a *prima facie* case of obviousness.² Without motivation and a reasonable expectation of success, a *prima facie* case of obviousness cannot be established.

The Applicants submit that the arguments set forth in this Office Action address how one of skill in the art would be *motivated* to make the subject matter of the rejected claims, rather than whether or not one of skill in the art would practice what is being claimed with any *reasonable expectation of success*. Statements supporting the idea that wild-type *Renilla* GFP possesses superior spectral properties to wild-type *Aequoria* GFP would not, in itself, provide a reasonable expectation of success in expressing wild-type *Renilla* GFP using a retroviral vector. The Office has not established any link between desirable spectral properties of a GFP, and a reasonable expectation of success in expression of that GFP in a retroviral vector.

Because there is no evidence supporting a link between, for example, expression of *Aequoria* GFP and its spectral properties, the Office's arguments do not rebut Applicants' position that there is no

brevity they are not reiterated herein.

² See M.P.E.P § 2143

reasonable expectation of success that a wild-type *Renilla* GFP could be expressed using a retroviral vector.

Without any showing that “red-shifting” the *Aequoria* GFP is linked to the ability to express the protein using a retroviral vector, there would be no reason to think that a different GFP that is already red-shifted (e.g., the wild-type *Renilla* GFP) would be expressible using the same type of vector.

Further, since the wild-type *Aequorea* GFP and wild-type *Renilla* GFP share only about 25% amino acid sequence identity (see Figure 1 of Applicant’s disclosure), it would have been impossible to determine whether the wild-type *Renilla* GFP contains an amino acid sequence that would make it retroviral-vector compatible. The wild-type *Aequorea* GFP and wild-type *Renilla* GFP amino acid sequence even differ at the region associated with fluorescence. The Applicants particularly note (as shown in Fig. 1 of the Applicant’s disclosure) that the *Renilla* GFP contains a Gln (Q) at position 65, the site of the “Ser65Thr” mutation that apparently red-shifts the *Aequoria* GFP. Thus, the important Thr residue at position 65 of the modified *Aequoria* GFP is not even present at the equivalent position of the wild-type *Renilla* GFP.

The Applicants acknowledge that absolute certainty is not the legal test for obviousness. However, this is not what the Applicants argue. Instead, the Applicants submit that one of skill in the art would have no reasonable expectation of success in expressing a wild-type *Renilla* GFP using a retroviral vector. Given the art-recognized problems associated with expressing wild-type *Aequoria* GFP it would be reasonable to expect problems expressing a wild-type *Renilla* GFP. The Office’s arguments fail to point out why one of skill in the art would expect that the claimed subject matter would work, and do no more than heighten the desirability of what is being claimed.

The general discussion set forth above supports the Applicants position that Aran, Bryan and/or Zolutukhin, taken alone or in any combination, cannot render the claimed invention obvious. Withdrawal of rejections that rely on the disclosures of these references is respectfully requested.

Each of the rejections set out in the Office Action is addressed in detail below.

Rejection under 35 U.S.C. § 103 - Bryan and Aran

Claims 1-3 and 20 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Bryan and Aran. The Office Asserts that Bryan's GFP, in combination with Aran's retroviral vectors, renders the subject matter of the instant claims obvious.

In view of the generally discussion set forth above, the Applicants submit that this rejection has been adequately addressed. Withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103 - Aran, Bryan and Zolutukhin

Claim 20 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Aran, Bryan and Zolutukhin. The Office Asserts that Aran's retroviral vectors, Bryan's Renilla GFP and Zolutukhin's human codon optimized GFP renders the subject matter of the instant claims obvious.

In view of the generally discussion set forth above, the Applicants submit that this rejection has been adequately addressed. Withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103 - Zolutukhin and Bryan

Claims 1-3 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zolutukhin and Bryan. The Office Asserts that Zolutukhin's human codon optimized GFP retroviral vector, in combination with Bryan's *Renilla* GFP, renders the subject matter of the instant claims obvious.

In view of the generally discussion set forth above, the Applicants submit that this rejection has been adequately addressed. Withdrawal of this rejection is respectfully requested.

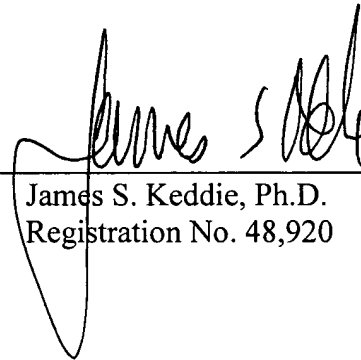
CONCLUSION

Applicant submits that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-0815, order number RIGL-011.

Respectfully submitted,
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Date: June 16, 2005

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